



Faculty of Engineering

**A STUDY ON THE IMPLEMENTATION OF TOTAL QUALITY
MANAGEMENT (TQM) PRACTICE IN SARAWAK
MANUFACTURING INDUSTRIES**

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ABSTRACT

Company's performance is the most important agenda to compete in manufacturing industries. Manufacturers nowadays are competing to plan strategy to increase their products quality and maintain their reputations in the market. The study of Total Quality Management (TQM) implementation is regarding to the method for improving products quality. TQM is the most available method or strategy that can be used by companies to increase their products quality with an objective to increase the competitiveness in global market. The questionnaire sent through mail survey to 125 manufacturing companies in Sarawak state. From the 125 companies, only 17 of them have given a feedback. From that 17 companies, only 8 companies implementing TQM and all the analysis is based on the responses of this 8 companies. All the data that had been accepted from the respondent, was analyzed using Statistical Package for Social Science (SPSS) version 11.5 for Window. The data analysis show that the manufacturers always fail to implementing TQM because of resistances from the employees that cannot understand the concept of TQM in a short period of time. Beside that, the respondent also agrees that the top management is the most important people to encourage the implementation of TQM. This study shows that, the implementation of TQM is the most difficult process. However, there are several methods that can be used to solve the encountered problems. All the manufacturing companies in Sarawak state must implement TQM, because of their advantages.

ABSTRAK

Pencapaian sesebuah syarikat merupakan agenda penting untuk bersaing di dalam industri pembuatan. Para pengeluar hari ini berlumba-lumba merancang strategi bagi meningkatkan mutu pengeluaran dan mengekalkan prestasi syarikat di dalam pasaran. Kajian terhadap pelaksanaan pengurusan kualiti secara menyeluruh adalah berkenaan dengan kaedah untuk meningkatkan kualiti produk. Pengurusan kualiti secara menyeluruh merupakan langkah atau strategi yang paling sesuai bagi sesebuah syarikat untuk memastikan kualiti produk mereka bertambah baik dengan tujuan meningkatkan tahap persaingan di pasaran antarabangsa. Data dalam kajian ini diperolehi daripada borang soal selidik melalui penghantaran surat ke 125 buah syarikat pembuatan di negeri Sarawak.. Daripada jumlah tersebut, hanya 17 buah syarikat yang memberi respon. Dalam 17 buah syarikat tersebut, hanya 8 buah syarikat yang melaksanakan pengurusan kualiti secara menyeluruh dan semua analisa adalah berdasarkan kepada 8 buah syarikat ini. Semua data yang diterima hasil daripada penghantaran borang soal selidik, dianalisa menggunakan SPSS versi 11.5 untuk Window. Berdasarkan data yang diperolehi daripada analisis, kebanyakan syarikat yang terlibat dalam kajian ini menganggap rintangan daripada golongan pekerja merupakan halangan utama yang membantutkan proses pelaksanaan pengurusan kualiti secara menyeluruh. Selain itu, mereka juga beranggapan pihak pengurusan atasan merupakan orang penting dalam menggalakkan pelaksanaan pengurusan kualiti secara menyeluruh. Kajian ini menunjukkan, pelaksanaan pengurusan kualiti secara menyeluruh merupakan proses yang rumit. Namun begitu, terdapat kaedah-kaedah tersendiri untuk mengatasi masalah tersebut. Oleh

yang demikian, dicadangkan pengurusan kualiti secara menyeluruh harus dilaksanakan oleh setiap syarikat pembuatan di Sarawak khasnya, kerana ia boleh mendatangkan banyak manfaat.

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LIST OF ABBREVIATIONS

- 1 ASEAN Free Trades Areas (AFTA)
- 2 Just-in-Time (JIT)
- 3 Multinational Corporation (MNCs)
- 4 Work-in Progress (WIP)
- 5 Flexible Manufacturing System (FMS)
- 6 Computer Integrated Manufacturing (CIM)
- 7 Optimized Production Technology (OPT)
- 8 Quality Critical Organization Characteristic (QCOC)
- 9 Investors in People (IIP)
- 10 Society of Motor and Trades (SMMT)
- 11 Sarawak Manufacturers Association (SMA)
- 12 Malaysian Industrial Development Authority (MIDA)
- 13 Small and Medium Industries (SMI's)

CHAPTER 1

INTRODUCTION

1.0 Changes in Global Competitions

Today's competitive business environment changes much faster than it did twenty years ago, primarily because of advances in the growing global economy (Hayes and Gary, 1994). According to Slack (1995) the environments in which most manufacturing companies operate are becoming ever more competitive with the increasing threat from international competitions and customer demand for consistent quality, low cost, swift-on-time delivery and customer specified product design and functionality. To compete in the global economy today, a firm must be very sensitive into the competitive success factor such as market driven strategies, customer based competitiveness and the time to the products (Zairi, 1996).

To achieve effective competition they also know how their organization competes in the marketplace especially in manufacturing flexibility, quality base differentiation, low cost production, innovation and time based competition (Cole, 1993). Gaither and Grag (1999) point out that if company want to succeed in global competition, they must have a commitment to customer responsiveness and continuous improvement toward the goal of quickly developing innovative products that have best combination of competitive priorities (low cost operation, high performance design, product design, delivery dependability and product flexibility). Krajewski

and Ritzman (1993) define competitive priorities as "the dimension that a firm's production system must possess to support the demands of the markets that the firm wished to compete in". They divided the competitive priorities into four categories that are cost, quality, time delivery and flexibility. In addition, according to Hiam (1993) focusing on competitive priorities is one way for an organization to improve its competitiveness. This competitive priorities have force may firm to examine their business process and to devise plans to respond to an increasingly competitive in market place (Cole, 1993). These competitive priorities have forced companies to critically assess their key competencies and to develop strategies to compete effectively in a global economy. Consequently, this global competition will impact the companies' performance in the globalization (Green, 1993).

The Malaysian Government has decided to develop a comprehensive program to enhance and promote standardization and quality management in the manufacturing industry. Accordingly, it requested technical assistance of the Japanese Government was requested for a study, which was undertaken in February 1990 (Hamzah and Ho, 1994). In Malaysia especially the Sarawak state, manufacturing industries have become aware on the competition in the global market. Through the introduction of ASEAN Free Trade Areas (AFTA) this year, manufacturing industries can prepare themselves for any challenges in the global competition (Khan and Mahmud, 2003).

According to Gunasekaran and Goyal (1998), TQM is a management philosophy and a set of techniques or procedures, involving total quality. This implies that quality is everybody's responsibilities to remains competitiveness. Martikainen and Olli (1998) add that many

companies have successfully implemented the TQM philosophy and have attained high quality goods with low process cost. The main objective of this new manufacturing concept and technology is to promote flexibility, quality and fast response to changes in the requirements of customers (Brown, 1992).

1.1 Total Quality Management (TQM) Practice

TQM is a management philosophy and set of techniques or procedures, involving total system approach to quality. Many companies have successfully implemented the TQM philosophy and have attained a high reputation for offering high quality goods with low process cost (Gunasekaran, Goyal, Martikainen and Olli, 1998). According to Al-Faraj and Alidi (1992) say TQM is an attractive improvement management concept which has gained reasonable attention during the last decade. Many organizations around the world have adopted TQM.

By implementing TQM, the company can increase the quality of products that can meet the demand of customers. This stability condition will make it easier to convince the company's bankers to invest in them if there is evidence that the organization is well run (Lau and Idris, 2001). The continuous investment remains the company's competitiveness with other companies (Brown, 1993). TQM can help to improve poor company's performance if the company is not doing well and cannot compete with other companies. The better performance of company will make it survive in long periods of time and also provides long term competitiveness (Ghobadian and Galleary, 1996).

Moreno-Luzon (1993) concluded that small firms were lagging behind big ones in the application of TQM. Successful small firms were found to place more emphasis on product and process innovation, investing in new production equipment and to have highly motivated management team with better managing skills. They tended to have less qualified personnel than larger one, and through TQM, were able to invest in the training of their staff which led to this improvement.

TQM is continuous improvement which can result in a higher quality of products and services and in improved employee's satisfaction ultimately satisfying their customers (Lovitt, 1996). The outcomes from implementing TQM are quality improvement, to pride in work, quality improvement becoming a part of the culture and improved communication (Yusof and Aspinwall, 2000). In addition, Thiagarajan and Zairi (1998) experienced reduction in delivery time, costs of poor quality, employee turn over, absenteeism rate and inventory levels. With regard to the tangible outcomes, this company has achieved numerous improvements ranging from improved product quality, increase sales and improved customer and employee satisfaction (Goh and Ridgway, 1994).

Beside of having a lot of benefits, TQM also have disadvantages. The review and the case study revealed that there are two major problems generally faced by small business. The first is financial and the second is a more general resource constraint, which in a board sense includes time manpower technical expertise and managerial expertise (Samson and Terziovski, 1999). A "full-blown" TQM approach will involve many improvement projects running concurrently, which in turn requires training of everyone in TQM concepts, tools, supervision and

teambuilding to name but a few. All these require a considerable investment (Chittenden, Mukhtar and Poutziopuris, 1996).

1.2 Problems Statements

A critical problem face by firms today is that they fail to estimate their company's future properly and this causes the lack of awareness about the quality of the product that need to retain the company's competitiveness (Chain, 1998). The main reason why company fail to prepares the proper planning to implement TQM is that they are not alert to the market demand such as what new products their customers will want, how much of these products are needed and the level of products and services quality (Russell and Taylor, 2000). This failure drives the company to over produce or produced their production of product (Schnaars, 1989).

In today's challenging global marketplace, cost of manufacturing has become increasingly important (Gunasekaran and Goyal, 1996). The authors also stated that in order to succeed, companies should produce high quality products and compete on the basis of price. The costs of manufacturing can be minimized by keeping low inventory levels and by having good relationship with vendors (Martikainen and Olli, 1998).

Under production happen when the production is less than the market demand. The firms fail to meet their customer's demand because their products in the marketplace are limited and are always sold out. Inches situation, customers have to wait for along time for their demand. The firm promises to send the products at a particular time and date but at last they cannot send the

products as promised. All of this is because of non proper planning and communication between the managers and customers, which the effect on delivery and lead-time (Sheaner, 1994). Customers will go elsewhere if the companies fail to satisfy on their demand. Consequently, those firms involved are going to lose their because of losing customer and at last they will face bankruptcy (Tybjee, 1987).

The new manufacturing concepts and technologies have resulted from efforts to obtain better integration of business and TQM strategies in order to achieve a management system that supports total quality. For example, automated production systems have been developed to responds to fast changes in business plans such as new design or new products to overcome market deterioration (Giunipero and Brewer, 1993). McTavish (1996) defined if the company wants to increase the quality of products with an objective to increase the competitiveness of the company's position in the global market, then appropriate TQM strategy should included.

1.3 Objectives of the Study

This study aims to help manufacturing companies to be more competitive in today's competitive environment through their implementation of TQM practice. This research is focusing on the scenario of Sarawak manufacturing industries. The objectives of this study are as followed:

- To investigate the pre-implementation experience of TQM
- To investigate the implementation experiences of TQM implementation
- To investigate the post-implementation experiences of TQM

1.4 Scope of Study

Specially, this study looks into:

- The initiators of TQM implementation
- The problems encountered during the pre-implementation of TQM
- The reasons for adopting TQM
- The pre-implementation period of TQM
- The problems encountered when starting to implement TQM
- The suggested methods to overcome the problems encountered
- The factor that affects the successfulness of TQM implementation
- The benefits and disadvantages have gained after implement TQM
- The future planning of the company that have implementing TQM

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the necessary terms and the related concepts of the change in global competition and total quality management (TQM). The section on concept of change in global competition includes overview of industrial environment. The literature review on (TQM) describes the function and activities that occur during the pre-implementation, implementation and post implementation. In addition, this literature review chapter will discuss the problems encountered and advantages that will companies get after implement TQM.

2.1 Changes in Global Competition

The growth of a large number of companies in marketplace affects the competition in global (Rhinesmith, 1991). According to Ferdow (1997), global competition has raised the competitive bar in almost all manufacturing industries. Indeed, today's manufactures faces the dual challenge in fending off tough global competition while striving to satisfy demanding world customer (Slack, 1995). Increasing of threat from international competition and demanded by worldwide consumer encourage the manufactures become more alert and always be careful in their business (Zalri, 1996; Naumann and Shannon, 1992; Spanner and Chandra, 1998 and Slack, 1995).

In the decade of free global competition, the challenge facing by firm as they attempt to identify and develop the important competencies that will lead to competitive success (Christensen, 1997). According to this situation, Porter (1980) point out that manager must properly understand their firm's position in the market place. They also must have a commitment to customer responsiveness and continuous improvement toward the goal of quickly developing innovative products that have best combination of competitive priorities (Gaither and Grag, 1999).

This is because company's performance actually is depends on how well managers adopt their firm's organization structure (Jenison, 1981; White and Hamermesh, 1981 and Kotha, 1993). Therefore, manufacturers nowadays tend to lean production (with minimized waste and minimized non essential activities) and to agile production (high flexibility and responsiveness to changing market demand) in order to achieve 'world class' status (Forza and Filliini, 1992; Jones, 1990 and Maskel, 1991). They aim to be more competitive and efficient in coordinating such function as market, sales, production planning, production scheduling, purchasing, production control, stock control and distribution (Slack, 1995).

Datuk Seri Dr Lim Keng Yaik has said that the manufacturing industries in Malaysia already develop especially in furniture industries. He also said, to remains competitive with other countries, that company need to make researches on how to increase the quality of furniture and try to find a new countries for marketing (Yatim, 2003). Deputy Chancellor of Unimas, Prof. Hj. Sulaiman Hj. Hanapi said development of technologies that occurred in Malaysia need more